

# COPY

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EL912235997US

**Declaration and Power of Attorney  
for Patent Application****Attorney's Docket No.: P1409**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD OF REDUCING ELECTROMIGRATION IN A COPPER LINE BY ELECTROPLATING AN INTERIM COPPER-ZINC ALLOY THIN FILM ON A COPPER SURFACE AND A SEMICONDUCTOR DEVICE THEREBY FORMED

the specification of which ☒ is attached hereto.  
☐ was filed on \_\_\_\_\_  
Application Serial No. \_\_\_\_\_  
and was amended on \_\_\_\_\_

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119, of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s) (Number/Country/Date Filed/Priority Claims: Yes/No)

No

I hereby claim the benefit under Title 35, United States Code, Section 120, of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a), which occurred between the filing date of the prior application and the national or PCT international filing date of this application (list application Serial No./Filing Date/Status):

N/A

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

F. David LaRiviere  
Reg. No. 27,207

May Lin DeHaan  
Reg. No. 42,472

Victor Flores  
Reg. No. 29,638

Elizabeth S. Sussex  
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Elizabeth A. Apperley  
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Diana Roberts  
Reg. No. 36,654

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EL912235997US

LaRiviere, Grubman & Payne, LLP  
P.O. Box 3140  
Monterey, CA 93942-3140

Name: May Lin DeHaan  
Telephone: (831) 649-8800

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or 1st or joint inventor: SERGEY LOPATIN

Inventor's Signature: *Sergey Lopatin* Dated: 2/12/2002  
Residence: 1000 Kiely Blvd., #66 Santa Clara, California 95051 Citizenship: Belarus  
Post Office Address: 1000 Kiely Blvd., #66 Santa Clara, California 95051

Full name of 2nd or joint inventor: ALEXANDER H. NICKEL

Inventor's Signature: *Alexander H. Nickel* Dated: 2/12/02  
Residence: 1200 Dale Ave. Apt. 140, Mountain View, California 94040 Citizenship: United States  
Post Office Address: 1200 Dale Ave. Apt. 140, Mountain View, California 94040



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MAY 03, 2002

PTAS

LARIVIERE, GRUBMAN & PAYNE, LLP  
MAY LIN DEHAAN  
P.O. BOX 3140  
MONTEREY, CALIFORNIA 93942-3140

Commissioner for Trademark:  
Arlington, VA 22202-3511  
[www.uspto.gov](http://www.uspto.gov)



\*102014616A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

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PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 02/26/2002

REEL/FRAME: 012649/0001  
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

LOPATIN, SERGEY

DOC DATE: 02/12/2002

ASSIGNOR:

NICKEL, ALEXANDER H.

DOC DATE: 02/12/2002

ASSIGNEE:

ADVANCED MICRO DEVICES, INC.  
ONE AMD PLACE, M/S 68  
P.O. BOX 3453  
SUNNYVALE, CALIFORNIA 94088-3453

SERIAL NUMBER: 10083809  
PATENT NUMBER:

FILING DATE: 02/26/2002  
ISSUE DATE:

ALLYSON PURNELL, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

G0414  
EL912235997US

03-12-2002



P1409

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FORM PTO-1595

RECORDATION FORM COVER SHEET

U.S. DEPARTMENT OF COMMERCE

PATENTS ONLY

Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

SERGEY LOPATIN, ALEXANDER H. NICKEL

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

2. Name and address of receiving party(ies):

ADVANCED MICRO DEVICES, INC.

Internal Address:

Street Address: One AMD Place, M/S 68, P.O. Box 3453

City: Sunnyvale State: CA Zip: 94088-3453

Additional name(s) & Address(es) attached? ☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Other

Execution Date: 2/12/2002; 2/12/2002

4. Application number(s) or patent numbers(s):

If this document is being filed together with a new application, the execution date of the application is: Filed Herewith

A. Patent Application No.(s)

B. Patent No.(s)

Filed herewith

Additional numbers attached? ☐ Yes ☒ No

10/083809

11002 U.S. PTO  
10/083809  
02/26/02

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: LARIVIERE, GRUBMAN & PAYNE, LLP

Internal Address:

Street Address: P.O. Box 3140

City: Monterey State: CA Zip: 93942-3140

6. Total number of applications and patents involved:

One

7. Total fee (37 CFR 3.41): \$ 40.00

☒ Enclosed

☐ Authorized to be charged to deposit account

8. Deposit Account number:

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

May Lin DeHaan  
Name of Person Signing

Signature

February 26, 2002  
Date

Total number of pages comprising cover sheet 1

03/11/2002 DBYRME 00000078 10083809

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**ASSIGNMENT AGREEMENT**

FOR good and valuable consideration, receipt of which is hereby acknowledged, **SERGEY LOPATIN, of Santa Clara, California, and ALEXANDER H. NICKEL, of Mountain View, California,** hereinafter ASSIGNORS, do hereby sell, assign, and transfer unto **ADVANCED MICRO DEVICES, INC.,** doing business at **One AMD Place, M/S 68, P.O. Box 3453, Sunnyvale, California 94088,** hereinafter ASSIGNEE, its successors and assignees, the entire title, interest and right, including the right of priority, in an application for Letters Patent of the United States, entitled **METHOD OF REDUCING ELECTROMIGRATION IN A COPPER LINE BY ELECTROPLATING AN INTERIM COPPER-ZINC ALLOY THIN FILM ON A COPPER SURFACE AND A SEMICONDUCTOR DEVICE THEREBY FORMED,** filed herewith, and the inventions and any of them therein set forth and described, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor, and any and all provisional, divisional, reissue, continuation, substitute, or renewal applications thereof which have been or shall be filed in the United States and any and all equivalents thereto in any and all foreign countries;

And for the above consideration ASSIGNORS covenant to assign to ASSIGNEE, under identical terms herein, any and all improvements which have been or shall be developed by ASSIGNORS regarding subject matter herein;

And for the above consideration ASSIGNORS agree promptly upon request of the ASSIGNEE, its successors and assignees, to execute and deliver without further compensation any power of attorney, assignment, application (whether original, continuation, renewal, substitute, divisional, or reissue) or other papers which may be necessary or desirable fully to secure to ASSIGNEE, its successors and assignees, the inventions and any of them described in said application and patent rights therein, in the United States and in any country foreign thereto, and to cooperate and assist in the prosecution of appeal and interference proceedings involving said inventions and/or in the adjudication or re-examination of said Letters Patent, provided that the expenses which may be incurred by ASSIGNORS in lending such cooperation and assistance be paid by ASSIGNEE; and

ASSIGNORS covenant that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by ASSIGNORS, and that full right to convey the same as herein expressed is possessed by ASSIGNORS.

This agreement constitutes the entire agreement of the parties and supersedes and cancels any and all prior and/or contemporaneous utterances, statements, representation, understandings and/or agreements whether oral and/or written in connection with this agreement.

IN WITNESS WHEREOF, ASSIGNORS agree to the above-mentioned terms and conditions as below evidenced by their signatures:

2/12/2002  
Date

Sergey Lopatin  
SERGEY LOPATIN

2/12/02  
Date

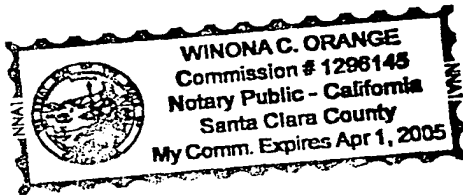
Alexander H. Nickel  
ALEXANDER H. NICKEL

STATE OF CALIFORNIA ]  
                                   Santa ]  
 COUNTY OF Clara ]

On 02-12-02 ~~2002~~, before me, WINONA C. Orange,  
 personally appeared SERGEY LOPATIN,

~~personally known to me~~  
 OR ~~\*~~ proved to me on the basis of satisfactory evidence to be the person whose  
 name is subscribed to the within instrument and acknowledged to me that ~~(s)he~~ executed the  
 same in ~~(his/her)~~ authorized capacity, and that by ~~(his/her)~~ signature on the instrument the  
 person or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.



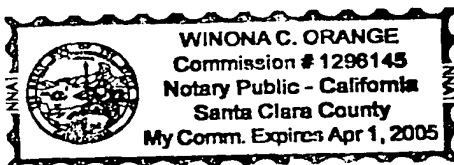
Winona C. Orange  
 Notary Public

STATE OF CALIFORNIA ]  
                                   Santa ]  
 COUNTY OF Clara ]

On 02-12-02, ~~2002~~ before me, WINONA C. Orange, Notary Public,  
 personally appeared ALEXANDER H. NICKEL,

~~personally known to me~~  
 OR ~~\*~~ proved to me on the basis of satisfactory evidence to be the person whose  
 name is subscribed to the within instrument and acknowledged to me that ~~(s)he~~ executed the  
 same in ~~(his/her)~~ authorized capacity, and that by ~~(his/her)~~ signature on the instrument the  
 person or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.



Winona C. Orange  
 Notary Public

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Date of Deposit: July 23, 2003

I hereby certify that this paper or fee is deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the above-indicated date indicated and is addressed to:

Mail Stop Patent Application, Commissioner for Patents, PO. Box 1450, Alexandria, VA 22313-1450.

Typed or Printed Name of Person Mailing Paper or Fee: LINDA BANTRELL

Signature: 

PATENT  
Docket No. P1532

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: SERGEY LOPATIN  
ALEXANDER H. NICKEL

SERIAL NO.: FILED HEREWITH  
(PRIORITY DOC.: 10/083,809)

FILED: FILED HEREWITH  
(PRIORITY DATE: FEBRUARY 26, 2002)

TITLE: A SEMICONDUCTOR DEVICE HAVING COPPER LINES WITH  
REDUCED ELECTROMIGRATION USING AN ELECTROPLATED  
INTERIM COPPER-ZINC ALLOY THIN FILM ON A COPPER  
SURFACE (Herein Amended)

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MAIL STOP PATENT APPLICATION  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450

APPOINTMENT OF ASSOCIATE ATTORNEY

Dear Sir:

I hereby appoint Robert Edward Kasody, Reg. No. 50,268, and Kenneth L. Green, Reg. No. 44,724, as my associate attorneys to prosecute the above-referenced patent application, to make alterations and amendments therein, and to transact all business in the Patent and Trademark Office connected therewith.



Please continue to address all future communications to LaRiviere, Grubman & Payne,  
LLP, Post Office Box 3140, Monterey, CA 93942-3140.

Respectfully submitted,



May Lin DeHaan  
Reg. No. 42,472

MLD/REK/sf

Date: July 23, 2003

LARIVIERE, GRUBMAN & PAYNE, LLP

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